Table of Contents

I. Purpose and Need for Action

Summary

The purpose of the project is to implement the new trail construction proposed in the final *New River ACEC Management Plan*. See EA number OR128-93-15 for the analysis of the entire trail system at New River ACEC. This Environmental Assessment is tiered to the *New River ACEC Management Plan*. The project is in conformance with the *Coos Bay District Resource Management Plan* and the *Coos Bay District Outdoor Recreation Program Plan*. The project is intended to provide for environmental education, recreational access/viewing in a unique area, and to reduce visitor related impacts.

District Resource Specialist Reports and other references can be found in the Environmental Assessment (EA) Analysis File, which is located at the Coos Bay District BLM office in North Bend, OR., and is hereby incorporated by reference.

Scoping

The primary purpose for scoping is to identify the agencies' and public's concerns relating to a proposed project and defines the issues and alternatives that are examined in detail in this EA. The scoping process consisted of an Interdisciplinary (ID) Team that identified potential and significant issues that may develop into alternatives to the proposal. The general public was notified of the planned EA through a public announcement in the local newspaper, *The World*, and by inclusion of the announcement on the District's homepage on the internet. These announcements invited people to comment on the planned EA. Furthermore, those agencies and interested parties on the District's mailing list were contacted by letter or Email. Scoping information can be found in the Analysis File.

Identified Issues

Through the scoping process, the following issues were identified. Below is how the ID Team resolved these issues.

Issue 1: Why does the proposed action include two viewing areas and not the trail connection proposed in the New River Management Plan (NRMP)?

Resolution: The New River Management Plan is a programmatic document that sets a course of action, but does not analyze proposed projects in detail. Separate NEPA documents, like this one, analyze project specifics.

After many site visits and ID team discussions, it was determined that although the trail connection would not have a significant impact on the area, it would not be the best course of action. The ID team decided that the trail would be excessively costly. This high cost could not be justified in an area which receives relatively low visitation. The original action proposed in the NRMP would also result in the felling of an excessive amount of hazard trees (dead trees). Furthermore, the trail would come close to Port-Orford-cedar which would increase the need for management in the area. Finally, the ID team was concerned that the presence of the boardwalk trail and its users might displace some wildlife, which is a major focus of the recreational experience at New River. The ID team decided it would be prudent to analyze other potential alternatives including the proposed action.

The proposed action was designed to provide a similar experience without having to actually bring the visitor along the lake shore by providing one or two viewing areas, one at the lake's edge and the other on a hilltop overlooking the entire lake.

The proposed action is similar to the recommendations in the New River Management Plan. The plan called for the trail connection and one viewing platform located in the same area as Viewing Area #1 (see section II - alternatives for a description) in the proposed action. In essence, the proposed action was designed to mitigate the potential detrimental impacts that might be created through the construction of a boardwalk by exchanging the trail connection for an additional viewing area located where the recommended trail connection would intersect with the Muddy Lake Trail.

Issue 2: Will the proposed viewing areas adversely affect water quality?

Resolution: BLM hydrologist Marty Becker, determined that the viewing areas will neither adversely affect water quality nor attainment of Aquatic Conservation Strategy (ACS) objectives pertaining to water quality. Hardening the viewing sites should prevent future erosion-related damage and runoff. Re-vegetation of the viewing areas should also help prevent erosion and its related effects.

Issue 3: Will any Threatened and Endangered Species be affected by the proposed trail connection?

Resolution: The New River ACEC Management Plan identified the area as potential habitat for western lily, Aleutian Canada geese, bald eagles, western snowy plovers and peregrine falcons. The Muddy Lake area does not provide habitat for western snowy plovers. Bald Eagles and peregrines are known to use the area for resting and foraging. No nesting has been observed in recent years.

During the NEPA process, the plan including the trail system and proposed connection was consulted by the United States Fish and Wildlife Service (USFWS). USFWS concurred with a *May Affect, Not Likely to Adversely Affect* determination for western lily, Aleutian Canada geese, bald eagle, and peregrine falcon. A separate biological assessment and consultation will be prepared prior to finalization of this EA and implementation of the chosen action.

Monitoring of Aleutian Canada geese will be performed to determine use during migration and if geese are being affected by human use. The project area could be subject to appropriate seasonal closures if effects of platform use are determined to be detrimental.

Issue 4: How will this project affect ACS objectives?

Resolution: BLM fisheries biologist, Michael Rodriguez, determined the proposed action was consistent with Management Plan recommendations and findings, applicable Northwest Forest Plan Standards and Guidelines, NEPA Documentation, and applicable aspects of NMFS' March 18, 1997 Biological Opinion. In addition, he determined that the proposed action would not hinder or prevent attainment of Aquatic Conservation Strategy objectives to fisheries resources.

Issue 5: Will this project affect T&E fish species?

Resolution: Although coho salmon are listed in the watershed, Muddy lake does not drain into New River or any other stream in the watershed. Therefore, project implementation will not affect any fish species of concern. For more information see the Aquatic Resources section contained in the analysis.

Issue 6: **How will the proposed action affect the Port-Orford-cedar stand and the spreading of root rot?**

Resolution: One of the concerns of the ID team was the spread of Port-Orford-cedar (POC) root rot into and from the existing stand in the area as well as how the District would meet the POC Management Guidelines. Although the stand is already infected, the trail connection (Alternative #1) would require the removal of many dead and living POC. The proposed action would channel people along the existing trails and to the proposed viewing areas, which are over 250 feet away from the POC stand. This would essentially eliminate any risk of transmission to or from the POC stand by visitation to the viewing areas.

Issue 7: **Can the District develop recreation related infrastructure such as viewing areas and a boardwalk in an Area of Critical Environmental Concern (ACEC)?**

Resolution: Actions such as trail development, viewing platforms and boardwalks are allowed in an ACEC providing that the development(s) not degrade the natural resource values that the ACEC was designated for (special status species, wildlife habitat, cultural/historic, and botanical communities). The Federal Land Policy Management Act (FLPMA Public Law 94-579) states that ". . . ACECs are not necessarily areas in which no development can occur. Limited development, when wisely planned and properly managed, can occur in these areas without permanent damage to the historic, cultural or natural systems and processes for which the area was designated." The ID team determined that this action should not degrade New River's ACEC values.

II. Alternatives

This chapter describes the alternatives including the no action alternative and proposed action alternative. The descriptions are focused upon potential actions, outputs, and related design features.

Proposed Action (two viewing areas)

Description

This alternative would not construct the trail connection proposed in the NRMP but instead harden, manage, and maintain two "unofficial" existing viewing areas along the Muddy Lake Trail. These sites will provide views of the lake and the wildlife that utilize the lake's environment. The viewing areas will provide a means for managing recreational use in the area by reducing erosion and decreasing disturbance of wildlife.

Photo 1- Proposed Viewing Area #1

Viewing Area #1

Viewing Area #1 would be situated where the West Muddy Lake Trail is routed directly adjacent to Muddy Lake. Because the West Muddy Lake Trail is designated as handicapped accessible, this viewing area would be designed to be accessible as well. Currently, this site is utilized as an unofficial boat launch for Muddy Lake and is devoid of vegetation or topsoil. This proposed site appears 'beach-like' with a ground-surface of sand.

Viewing Area #2

The second viewing area would be located at a site on a hill overlooking Muddy Lake, where the NRMP shows a proposed trail connecting with Muddy Lake Trail. The viewing area is approximately 100 feet away from the lake's edge and approximately 50 feet above it. This area is already being used unofficially as an overlook. Because of the relatively steep and

Photo 2- Proposed Viewing Area #2

sandy slope, this viewpoint would not allow for handicap accessibility unless a short (50ft.) trail was constructed to facilitate access. To create this access trail, some brush would be removed and some cross slope excavation would take place. Approximately 50 feet of trail would need to be excavated. The trail would be constructed to meet ADA standards.

Design & Materials

The viewing areas will be designed in a manner that will "fit" the local environment. The viewing areas will be elevated (just above water level) platforms made of pressure treated lumber or cedar. Dimensions will allow for a maximum of 10 feet in width for the front (viewing end) and 8 feet in depth. The front (viewing end) will have a solid wall that will help disguise the human form by covering the legs of visitors. This wall will be a height of 42" (abdomen height on the average person). There will be railings on both sides of the platform to help channel and retain visitors on the platform. The railings will be set at 24" and 42" with the upper railing beveled to discourage people from sitting on them. The platforms will be made handicapped accessible (including a hardened entrance ramp or boardwalk) and have a ramp to allow for viewing over the 42" wall in the front (viewing) side of the platform. The platforms will also be designed to partially screen visitors from an aerial view (bird's eye). This will be done by planting shore pines or constructing an aerial screen made of lattice or similar material.

Interpretive Signage

Interpretive signs will be placed prior to the viewing sites to explain the importance of low impact viewing and relevant viewing techniques (not waving arms about, approaching quietly, etc.). At the view site, interpretive signs will be placed explaining the "wildlife friendly" design of the viewing area and the different wildlife which might be viewed from the site.

Brushing/Maintenance

The viewing area will be inspected yearly and appropriate maintenance actions will be taken to minimize impacts to wildlife. Minimal brushing to maintain viewing corridors would be done

using hand saws and tools. Whenever possible, non motorized tools will be used and minimal brushing will be scheduled outside of the nesting season (April to August). Noxious weeds will be reported to the Noxious Weeds Coordinator and removed according to guidelines.

Old Bog Trail

The Old Bog Trail would remain open. A split rail fence or other barrier with accompanying sign explaining the importance of the wetlands resources and delicate ecosystem and barring visitors from taking the "short-cut" along the lake's edge will be placed at the present terminus of the Old Bog Trail. The District's botanist (or their designated employee) will check the site on an annual basis to ensure that there are no impacts to the bog and its resources. If there is sufficient evidence of impacts (I.E,. trampled vegetation), the last quarter of the Old Bog Trail will not receive brushing or maintenance. This will prevent most casual visitors from traveling to the eastern end of Muddy Lake effectively taking away the desire to short-cut the lake.

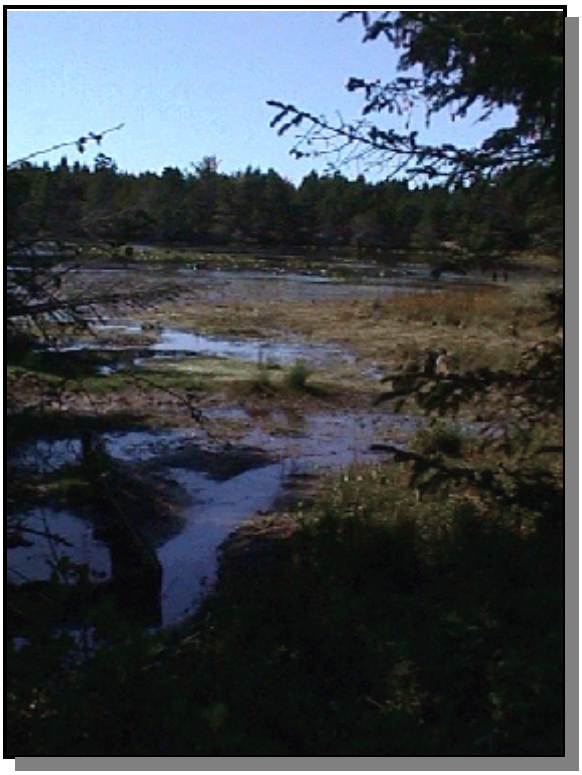


Photo 3- View from the end of Old Bog Trail

Alternative #1 (Trail Connection)

Location

The project area is located within the New River ACEC at the north end of Muddy Lake. The legal location (description) of the project area is Township 30 South; Range 15 West; Sections 10 and 11.

Description

This alternative involves constructing an elevated trail (boardwalk) along the northern edge of Muddy Lake connecting the Old Bog and Muddy Lake trails. The boardwalk would be routed just south of the Port-Orford Cedar (POC) stand and north of the Sphagnum bog. The trail

would be situated so as to be far enough from as many of the snags in the POC stand as possible while being at as great a distance from the lake shore as is feasible.

Signing

Signing of the trail connection would be consistent with the rest of the trail system at New River and would consist primarily of Carsonite posts. The trail would be signed to prohibit all forms of traffic except hiking. Signs would be posted to deter visitors from leaving the elevated tread. Interpretive displays and panels would be placed where needed to facilitate the environmental education objectives of the ACEC.

Photo 4- Example of a boardwalk

Design Features and Construction Techniques

During construction of the trail, all noxious weeds would be grubbed within 100 feet of the trail connection. Furthermore, all noxious weeds would be grubbed from all trails and skid roads incorporated into the trail system. Trails would be inspected every two years to ensure that noxious weeds are not present.

All construction and maintenance techniques would be in conformance with the *Trails Management Handbook* and the *Trail Manual* contained in the Analysis File. Construction will be scheduled to minimize conflicts with wildlife.

Maintenance

The trail would be maintained by Bureau of Land Management employees and trained volunteers. Activities would include brushing to specifications (*Trails Management Handbook* [USFS, FSH 2309.18] and the *Trail Manual* [State of California, Department of Parks and Recreation, 1991] hereby incorporated by reference, in Analysis File), clearing of downed debris, grubbing of roots and plants out of the tread, and placing of debris to prevent unauthorized paths and short-cuts. Inspection and management for POC and noxious weeds would be performed bi-annually.

Port-Orford Cedar

To ensure that the Port-Orford cedar (POC) root rot disease, *Phytophthora lateralis* (PL),

does not spread due to the proposed project, all green POC (8" or less) and Pacific Yew found within 20 feet up slope from the trail connection and 30 feet downhill would be pulled, cut or girdled below the lowest live limb. All green POC larger than 8" in diameter would be girdled.

Brushing
Brushing would be done on an as needed basis. Brushing should be done in a way that does not create a "vegetative tunnel" or barrier wall. Due to the pruning of the understory, "Vegetative tunnels" can essentially act as barriers to some wildlife migration. Therefore, areas prone to "tunneling" should be brushed in a mosiac pattern to allow for periodic breaks in the understory.

Walkway material
The walkway would be constructed out of cedar, plastic, fiberglass, steel, or pressure treated lumber. Any material which would come into regular contact with water or soil should be non-corrosive and non-leaching. Final design will be determined by a team consisting of a wildlife biologist, recreation planner, and engineer.

No Action
If this alternative is selected, the proposed project would not take place and there would be no changes in the current management activity. The path leading to Viewing Area #2 would not be brushed by BLM employees (as is the current management policy). Visitors would continue to use the unofficial trail and likely continue to attempt to find routes to the other side of the lake. The Muddy Lake and Old Bog trails would continue to be maintained and brushed in accordance with the New River ACEC Management Plan.

III. Affected Environment

This section describes the environmental components that could be affected by the Proposed Action, No Action, and Alternative #1, if implemented. This section does not address the environmental effects or consequences, but rather serves as the baseline for the comparisons in Section IV - Environmental Consequences.

The proposed action and alternative #1 would occur along the north end of Muddy Lake within the New River ACEC as shown on the project location map in Appendix 1.

The affected environment of Alternative #1 (trail connection) is associated with wetlands and is located within an ACEC. For a more detailed description of these components, as well as descriptions of historic composition and function of project-area ecosystems, see the *Northwest Forest Plan* (Interagency 1994), *Coos Bay District Resource Management Plan* (BLM 1995) and *New River ACEC Management Plan* (BLM 1995).

Proposed Action

Aquatic and Riparian Habitat and Species

A site investigation during high water clarity determined that the lake does not appear to contain any native fish and it is unlikely that it ever contained native fish in historic times because of its lack of suitable habitat. Muddy Lake is a shallow, warm, eutrophic lake with a muddy bottom, no gravel substrates, and no inlet or outlet streams. However, other land-locked deflation plain lakes in the region do contain native cutthroat trout. The lake does contain large mouth bass, an exotic species, confirmed by electroshocking by Michael Kellet in 1994. Fishermen reportedly continue to fish for bass in the lake as well as bluegill. In addition, the vocalizations of bullfrogs (also exotic) can be heard around the lake, confirming their presence. Although it is unlikely that the lake was once populated with cutthroat trout, had it been, it is possible that they would have been extirpated by the voracious large mouth bass and bullfrogs.

Soils

The sandy soils involved with the viewing areas are identified as Waldport-Heceta fine sand soil map unit (61D) by the Soil Survey of Coos County. The Waldport soil type is deep, excessively drained and occurs on stabilized sand dunes. The Heceta soil type is deep, poorly drained and occurs in the interdunal swales and depressional areas. Both soils are derived from eolian material (wind deposited). Specific soil characteristics can be obtained from the Soil Survey of Coos County, Oregon, 1989.

Field investigation of the proposed sites for the viewing areas was conducted on 10/22/98, 11/10/98 and 12/5/98. Field analysis revealed both sites exhibit extensive soil disturbance and are lacking in vegetative cover.

Human Uses

New River (Storm Ranch) has historically been available to the public for recreational use. Hunting, fishing, and horseback riding were the most popular activities. From the 1950's to late 1970's landowner Jack Storm controlled access and charged entry fees for the several thousand fishermen that annually visited the property. In 1973, BLM Wildlife Biologist Dick King recognized New River for its recreational opportunities. At the time, he estimated 8,000 visitor days per year.

The primary activities currently occurring on the existing trail system at New River are hiking, walking, wildlife watching, exploring, and educational touring. Hunting, fishing, and horseback/bicycle riding are also current recreational activities allowed at New River. Hunters and fishermen use the trails to access the river and Muddy Lake. There is no evidence that horseback/bicycle riding takes place on or near the trails at Muddy Lake. Motorized vehicle use at New River is prohibited except on designated roads between September 1 and March 31. Motorized access on trails to Muddy Lake is not permitted to visitors.

Approximately two thirds of the Lake is privately owned. Human activity is seasonal and intermittent. Hunting and fishing have occurred at the Lake for many years and may be one reason for the presence of bass and bull frogs (both exotic species). Most of the hunting and fishing has been done by local community members. This lake's limited size restricts the amount of fishing pressure which could be sustained and limits the amount of hunting which could occur because of safety concerns.

A major focus of the management plan for New River is environmental interpretation. The NRMP envisions Storm Ranch having an environmental education workshops and programs that will play a major part of the interpretive opportunities (NRMP, p.3-21). The NRMP also addresses the need for an interpretive plan which will manage visitation and environmental impacts to ensure that the values of the ACEC are not compromised.

A visitor use study conducted by site hosts at New River in 1997 and 1998 (Rodenkirk, New River Point Count Survey Summary, Coos Bay District-BLM 1999) seems to indicate that recreational use levels of the trails are relatively low in the ACEC. Of the 2,842 visitors to the ACEC in 1997, only 350 were recorded as hikers (roughly twelve percent). In 1998, 217 hikers were recorded. The highest month recorded in the two year period was during August 1997, which saw 71 hikers (or slightly over 2 per day). On average monthly visitation during

the two year period was 23.6 (less than one hiker per day). Other uses which may include using the trails were bird watching which recorded 35 people in 1997 and 43 in 1998 and sight-seeing which saw visitation levels of 604 (1997) and 468 (1998). All of these activities combined amount to 2,284 visits (hiking, sightseeing and bird-watching). Assuming that every visitor in these categories visited the proposed viewing areas, it would amount to 47.6 people per month (or about 1.5 visitors per day).

The lower viewing area, #1, is occasionally being used as an unofficial boat launch for fishermen looking to catch Bass and other warmer water exotics. As a result, the area has been denuded to a sandy beach.

A brushed primitive trail (unofficial) connects the site of the proposed upper viewing area, Viewing Area #2, to the East Muddy Lake Trail. Visitors are hiking to the proposed Viewing Area #2 to obtain the vistas of the lake. Some visitors are also dropping down to the lake from the overlook to obtain fishing access.

Vegetation

No special status plants are known to occur at the two viewing area sites. Vegetation at the proposed Viewing Area #1 consists of a shore pine (*Pinus contorta* var. *contorta*) and scattered European beachgrass (*Ammophila arenaria*). Diversity of vascular plants is relatively low at this location. Vegetation at the Viewing Area #2 is dominated by shore pine and other woody plants such as wax myrtle (*Myrica californica*) and bearberry (*Arctostaphylos uva-ursi*).

Survey and Manage Component 1 lichen *Kaernfeltia californica* occurs on the lower branches of the shore pines in the immediate vicinity of the proposed viewing area location.

Cetraria (Kaernfeltia) californica (Survey and Manage Component 1 species) was located at both of the proposed viewing area locations on shore pine branches. This species was relatively abundant at Viewing Area #1, while it was scattered on the branches at Viewing Area #2.

The vegetation at proposed Viewing Area #1 is composed of a scattered to dense forest of shore pine with *Juncus leseuerii* and *Lupinus littoralis* scattered in the sand. Vegetation along the lake is dominated by *Carex* sp. and *Lysimachia terrestris*. Aquatics in the lake include *Nuphar polysepala*, *Potomogeton* sp., and *Scirpus subterminalis*. Vegetation at Viewing Area #2 is dominated by shore pine, Garrya elliptica, and salal. Understory vegetation includes kinnikinnik (*Arctostaphylos uva-ursi*) and ground-cone

(*Boschniakea strobilacea*) and other forbs. A few individuals of bull thistle (*Cirsium vulgare*), a noxious weed, were located at this site. See Analysis File for a species list.

Photo 5- Evidence of Beaver at Muddy Lake

Wildlife Species

Muddy Lake was surveyed for Aleutian Canada geese in the early 1990's via a contract with The Nature Conservancy. Richard Frensel was the researcher who conducted the surveys and he documented resting populations of these geese on the Lake. Numerous species of waterfowl, have been observed on the Lake include trumpeter swans, American coot, mallard duck, ring-necked duck, and bufflehead duck. Species of wading birds include great egret, great blue heron, and American bittern.

Bald eagles, peregrine falcon, osprey and turkey vultures have been observed from the shores of the lake. Mammals observed include coyote, bats (unknown species), chickeree and Townsend's chipmunk, striped skunks, opossum, black-tailed deer, bobcat, red fox, beaver, muskrat, bushy-tailed woodrat, river otter and grey fox. Song birds are common in the numerous canopy levels of the forest surrounding the lake. Anna's hummingbird is a year round resident and the Rufus and Allen's hummers both seem to occur in the area. It may be that the New River ACEC is the division point for these species where to the South one species occurs and to the North the other occurs. An estimated wildlife species list is in the New River ACEC management plan. The list is subject to change because of the very dynamic nature of the unique lakes along the South coast of Oregon.

Cultural Resources

Site visits to the project area examining the potential viewing areas did not locate any Prehistoric cultural resources.

Alternative #1

Aquatic and Riparian Habitat and Species

Same as corresponding section for Proposed Action. See page 8.

Soils

The Soil Survey of Coos County identified the Waldport-Heceta fine sand soil map unit (61D) to encompass the entire proposed trail area (See Attached Map). The Waldport soil type is deep, excessively drained and occurs on stabilized sand dunes. The Heceta soil type is deep, poorly drained and occurs in the interdunal swales and depressional areas. Specific soil characteristics can be obtained from the Soil Survey of Coos County, Oregon, 1989.

A field investigation was conducted on the proposed trail area on 10/22/98, 11/10/98 and 12/5/98. In addition to the Waldport-Heceta soil map unit, several pockets of sapric organic soils with unique botanical resources were delineated in the proposed trail area. Field review in December, 1998, revealed the majority of the organic soil was ponded with standing water. Hydric soils for wetland determination are defined as, "soil that under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile" (Federal Register, July 13, 1994). Field indicators in the project area such as the presence of hydrophytic vegetation, hydrogen sulfide gas, thickness/depth of organic soil material, soil color, hue, value, chroma and saturation levels confirm the presence of a hydric soil.

Human Uses

Few visitors have attempted to traverse along Muddy Lake because of its boggy terrain. However, those that do have caused impacts to the sensitive environment (sphagnum bog and Darlingtonia) because they are creating poorly located un-managed trails that travel through these delicate resources. Evidence suggests that the majority of visitors who circumnavigate the lakes edge are fishermen and visitors who are attempting to cut across the northern edge of the lake because the trails on both sides of the lake end without a clear defining point or sign.

Muddy Lake offers unique recreational/educational opportunities, such as, the potential to view and walk among Sphagnum moss and Darlingtonia in a coastal lake/wetland setting within the Coos Bay District (providing the resources are protected and managed for).

Hydrological Resources

Landscape setting for this proposed trail is located within a lake margin or lake floodplain wetland area. The impacted area is comprised of Sphagnum bog and hardwood shrub communities, multiple beaver channels, and a Port Orford Cedar stand. There are no inlet or

outlet streams within this lake system. Hydrologic input sources originate predominately from precipitation and groundwater discharge, with lesser amounts coming from surface runoff from the nearby area. Quantity from each of these input sources fluctuates seasonally with regional weather patterns. This fluctuation causes hydrologic levels for the lake and wetland to lower during the dry cycle, which occurs primarily from mid-summer to late fall. These levels then rebound after the return of the winter rains and persist again into the early part of summer.

Vegetation

Pre-field review

Many special status plant species occur within the New River ACEC. These species occur in a myriad of habitats. Species known to occur within the vicinity of the project are California pitcher-plant (*Darlingtonia californica*), a BLM Tracking species, and northern cotton-grass (*Eriophorum chamissonis*) a BLM Assessment species. The project area is potential habitat for western lily (*Lilium occidentale*), but many previous surveys in the vicinity have not turned up any plants.

The extreme northeast corner of Muddy Lake lies a sphagnum wetland plant community which includes an assemblage of many unique plant species. This plant community includes many species which are rare along the Oregon Coast and may have been more common in the past. Species such as *Sphagnum* sp, *Trientalis arctica*, and *Viola mccloskeyi* are species typically found at high northern latitudes or high elevations.

Survey and Manage (S&M) species include those fungi, lichen, bryophyte, and vascular plants as described in the ROD for the Northwest Forest Plan. These species have different management strategies as described on pages C-4 to C-6 in the ROD. Species under Strategy 1 require site specific management for discovered locations. Coastal areas are known for their high diversity of lichen species and several S&M have been documented along the southern Oregon Coast and New River in particular. Locations of *Teloschistes flavicans* and *Cetrelia californica* have been documented on hardwood and conifer branches in the general vicinity of the project area. No locations or potential habitat of any fungi, bryophyte and vascular plant species occur in the project area.

Field Results

The only special status species located during the site visit were California pitcher-plant. No Survey and Manage Strategy 1 species were located, although six Strategy 4 species *(Sticta limbata, Nephroma laevigatum, Nephroma bellum, Pseudocyphellaria anthrapsis, Lobaria pulmonaria*, and *Peltigera collina*) were located. These species do not require any management at this time. The plant communities where the project is planned is located within a *Darlingtonia/Lysitichon*/hardwood shrub and lake margin wetland communities. This area is annually inundated with water from Muddy Lake which then dries up during the summer months. Soils are highly organic, acidic and most likely over sand or sandstone. This is a result of deposition of organic material over many years. In some areas the soil is Aspongy. Drainage ditches are present which may drain the area sooner than historically. The overstory species are primarily shrubs such as Laborador-tea (*Ledum glandulosum*), wax-myrtle (*Myrica californica*), and evergreen huckleberry (*Vaccinium ovatum*). Conifer tree species in the area include Port-Orford-cedar (Chamaecyparius lawsoniana), Sitka spruce (*Picea sitchensis*), and in the drier portions Douglas-fir (*Pseudotsuga menziesii*), and shore pine (*Pinus contorta* var *contorta*). Closer to the lake is more of a Carex wetland with Oregon crabapple (*Malus fusca*), and ocean-spray (*Spriaea douglasii*) and sedges (*Carex* sp.), tufted hairgrass (*Deschampsia cespitosa*) and rushes (*Juncus* sp.). In the sphagnum hummocks includes round-leaved sundew (*Drosera rotundifolia*) and northern starflower (*Trientalis arctica*). In the wetlands under the shrubs very few herbaceous species occur, including California pitcher-plant and skunk-cabbage (*Lysitichon americanum*).

See Appendix I for a species list.

Wildlife Species

See the proposed action's Wildlife Species section on page 10.

Cultural Resources

Site visits to the project area examining the potential connection trail did not locate any Prehistoric cultural resources.

An historic irrigation feature was located near the east end of the proposed connection. The proximity of several old irrigation pipes suggests this wooden trough may have been used as a filter, to permit water intake without also obtaining sediment.

Photo 6- Lichen at Muddy Lake

No Action

The no action's resources are a combination of those described in the proposed action and alternative #1. See pages 8-13.

IV. Environmental Consequences

This section describes the scientific and analytical basis for the comparison of the alternatives, and the probable consequences as they relate to the alternatives.

The environmental consequences to critical elements of the human environment are outlined in the following table.

Critical Elements of Each Alternative

Critical Element of the Human Environment	Present in the Project Area	Affected by No Action	Affected by Proposed Action	Affected by Alternative #1
Air Quality	Yes	No	No	No
Area of Critical Environmental Concerns	Yes	Yes	Yes	Yes
Aquatic Conservation Strategy Objectives	Yes	No	No	No
Cultural Resources	No	N/A	N/A	N/A
Environmental Justice	Yes	No	No	No
Farm Lands	No	N/A	N/A	N/A
Flood Plain	No	N/A	N/A	N/A
Native American Religious Concerns	No	No	No	No
Noxious Weeds	Yes	Yes	Yes	Yes
Port Orford Cedar Management	Yes	No	No	Yes
Threatened & Endangered Species (Wildlife)	Yes	No	Yes	Yes
Threatened & Endangered Species (Botanical)	No	N/A	N/A	N/A
Threatened & Endangered Species (Fish)	No	N/A	N/A	N/A
Wastes; Solid or Hazardous	No	N/A	N/A	N/A
Water Quality; Drinking/Ground	Yes	No	No	No
Wetlands/Riparian Reserve	Yes	Yes	Yes	Yes
Wild and Scenic Rivers	No	N/A	N/A	N/A
Wilderness	No	N/A	N/A	N/A

Proposed Action

Aquatic and Riparian Habitat

The proposed action is not likely to affect aquatic resources and is consistent with Management Plan recommendations and findings, applicable Northwest Forest Plan Standards and Guidelines, NEPA Documentation, and applicable aspects of NMFS' March 18, 1997 Biological Opinion. In addition, the proposed project does not hinder or prevent attainment of Aquatic Conservation Strategy objectives at the 5th field watershed scale over the long-term.

Soils

The major limitations of these soils in regard to the proposed action is the hazard of soil blowing, erosion and ponding, and the susceptibility of the surface layer to compaction or disturbance. Recreational development according to the Soil Survey classification system shows a severe limitation for the 61D soil map unit (Soil Survey of Coos County, Oregon, 1989). This severe limitation is based more on wetness than any other factor and can be avoided by appropriate design and construction materials. A review of the Erosion factors (K, T, and wind erodibility group) for the Waldport-Heceta soil map unit place these soils in the high rill and sheet erosion category, only land subject to the direct exposure of rainfall will exhibit such rates of erosion. The proposed sites for the viewing platforms are currently lacking a vegetative canopy or a protective duff layer and are subject to high erosion rates and soil blowing. The construction of platforms may benefit the sites by protecting the soil from the direct exposure of rainfall. To sustain these soils and limit the effects of erosion, a minimum of the vegetation should be removed. Additionally, any mitigation measures to revegetate the site, such as planting native beach grass species etc., would limit or reduce soil erosion and blowing conditions.

Some soil displacement and compaction would be a direct effect expected from construction activities. An existing condition of soil disturbance and/or compaction exists in the proposed site areas, minimal additional soil impacts are anticipated from the implementation of the proposed action.

Selection of the viewing area alternative, from a soil resource perspective, would have less overall impact than the trail connection proposal or no action which would allow for continued resource degradation through unofficial trail creation.

Indirect Effects

No indirect effects are expected from the proposed action being implemented.

Cumulative Effects
No long term effects are expected from the proposed action being implemented.

Recommended Mitigation

- All treated lumber for viewing area construction should be in accordance with the latest revision of the AWPA standards (C2) and BMPs for soil and fresh water exposure. See analysis file for anticipated environmental impacts from the use of CCA treated wood in aquatic environments.

Hydrological Resources & ACS Objectives
The Northwest Forest Plan ROD indicates that lake margins are included under the Riparian Reserve allocation (pg. C-31) and thus all management activities within these areas must comply with applicable standards and guidelines. Recreation Management standards and guidelines (RM-1) states in part that "New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not prevent meeting ACS objectives" (NWFP-ROD).

The following Best Management Practices should be implemented on all areas of construction to achieve the Aquatic Conservation Strategy (ACS) Objectives of the NWFP-ROD.

The floor for Viewing Area #1 should be located outside of the seasonal high water level for the lake. These measures should help to protect bank stability, protect sensitive vegetation, and maintain lake hydrology by meeting ACS objectives numbers 2, 3, 4, 5, 7, 8, and 9 as outlined on page B-11 of the NWFP ROD.

Footings and framing lumber used in construction of the viewing areas and pathways, should be constructed as per BLM engineering specifications to prevent settling and subsequent water blockages. These measures should help to protect water quality by meeting ACS objectives numbers 2, 4, 8, and 9 as outlined on page B-11 of the NWFP-ROD.

The hardened approach leading to Viewing Area #1 should be constructed with adequate drainage, so as not to allow water to run the entire length of the trail and deliver water and sediment directly to the lake. This measure should help to protect water quality by meeting ACS objectives numbers 2, 3, 4, 5, and 8 as outlined on page B-11 of the NWFP-ROD.

Brushing and tree and snag removal for site preparation and construction for this project should be kept to a minimum. This measure should help to reduce the amount of ground disturbance in these near-shore areas. These activities should likely have a minimal impact on the current

canopy cover and net increase of solar radiation, and should not prevent the attainment of ACS objective number 8 as outlined on page B-11 of the NWFP-ROD.

Interpretive signs placed at the end of the Old Bog Trail should help protect the flora, fauna, and hydrology of the wetlands by deterring 'short-cutting' across the wetland, and therefor help attain ACS objectives numbers 2, 3, 4, 8, and 9 as outlined on page B-11 of the NWFP-ROD.

Evaluate, based on future trends, if other conservation practices need to be applied for the protection of soil and water resources. Examples include: A) heavy use of trail during the winter season deteriorates hardened trail surface and begins to contribute sediment or excessive runoff to Muddy Lake, or B) Interpretive signs along the Old Bog Trail do not deter visitors from entering the wetland area between the two trails.

When implemented to these standards, the design of this project should work to minimize harm and retain the Hydrologic function of the lake margin and wetland Riparian Reserves.

Cumulative Effects

Cumulative effects as a result of construction and frequent use of these viewing sites, should most likely have a negligible effect on the hydrology of the Muddy Lake ecosystem. Moreover, improvements and developments to these existing viewing sites may have a beneficial effect by concentrating and containing visitor traffic to these specific areas, therefor reducing further bank and vegetative disturbances.

Human Uses

The proposed action would likely have the following direct impacts:

1. The visitor's experience should be enhanced through the unique vistas that will be officially recognized and signed.
2. Visitors will receive interpretive and educational opportunities on low impact wildlife viewing.
3. The lakeshore vegetation should receive greater protection from the creation of Viewing Area #2 which should prevent visitors from dropping down to the lake or continuing to cut across to Old Bog Trail (as many are currently doing now).

The proposed action would likely have the following indirect impacts:

1. The two existing but not "officially recognized" viewing areas will receive site rehabilitation in the form of re-vegetation and hardening.
2. Visitors to New River would not have easy access (a trail) to the lake shore as was originally intended in the NRMP, but would instead be provided with two

viewing areas that essentially provide for the same experience (except for close viewing of Darlingtonia and the Sphagnum bog).

It is not likely that implementation of this alternative will have any effect upon visitation levels to the ACEC or the trail system.

Vegetation

No impacts are expected due to the implementation of the proposed action providing that prior to the removal of vegetation for pruning or construction of the platforms that the District Botanist field checks the work to be performed. This will ensure that the Survey and Manage Component 1 species are not impacted. See the Affected Environment section for a discussion of the species found in the project area.

Wildlife

This proposal is expected to have some impacts to wildlife using the lake. The primary concern with this proposal is from the development of Viewing Area #2. Screening is usually considered from an aerial perspective, or a horizontal perspective only. At this site screening is needed for both of these perspectives. The horizontal perspective requires some vegetative manipulation (pruning) to allow for viewing. This annual pruning is expected to affect the riparian habitat, and allow the projection of the human form and sound across the surface of the Lake. It is recommended that as little native vegetation be removed as is possible and that the viewing platforms be designed with a solid wall in the front to disguise the human form as well as some sort of aerial screening (shore pines, screening, etc.) which will mask the human form from above.

Developing Viewing Area #1 is less likely to affect wildlife using the Lake. This site is at water level and a visitor has a much lower probability of projecting the human form or sound across the entire lake. This site is much more accessible for vegetative management to culture a "living" screen in front of the viewing site. This site is still within the riparian/wetland habitat reserve; however, this proposal has the potential to restore vegetation rather than to reduce it within this reserve.

Cultural Resources

It is not expected that this project will affect cultural resources. However, if any other potential cultural resources are encountered during project work, all ground disturbing activity in the vicinity should stop and the District Archeologist should be notified at once.

Alternative #1

Aquatic and Riparian Habitat

The increase in visitor access to the lake that might result from the construction of the boardwalk, could indirectly impact fisheries resources. The easier access would increase the likelihood that further introductions of exotic fish and other aquatic organisms would take place. This would not impact native fish in the lake since there are none present, but it could impact other native aquatic organisms such as amphibians by competing for food and space. Additionally, further introductions of exotic aquatic organisms to the lake is of some concern because the greater their abundance in the lake, the more likely it is that visitors and wildlife will transport them to nearby native-fish-bearing water bodies. There are numerous water bodies on District, and in the region in general, to which exotic aquatic organisms have been introduced. Tens of thousands of such organisms are present in several ponds on District.

It is speculative whether the increased visitor access to the lakeside following construction of the proposed boardwalk would result in the further introductions of exotic aquatic organisms to Muddy Lake by humans. It is also speculative whether, upon introduction, such organisms would be transported by humans or wildlife to other water bodies. But once introduced, there is no practicable way to remove them except to poison all the aquatic animals in the lake. This should be considered when deciding whether to implement this alternative. Otherwise, there are no foreseeable impacts that would result to fisheries resources as a result of construction of the boardwalk.

Soils

The degree of impact for the proposed action is relative to the soils susceptibility to surface layer to compaction or disturbance, amount of vegetation removal, and the hazard of erosion and windthrow (Table 1).

Table 1 : Recreational Soil Properties for Waldport-Heceta fine sand 0-30 % slope

Proposed Project	Soil Type	Hazard of Paths and Trails	Hazard of Erosion	Hazard of Windthrow
Trail Connection	**61D**	**Severe (ponding)**	**Slight-Severe (duff layer)**	**Slight-Severe (ponding)**

Recreational development of trails and paths according to the Soil Survey classification system shows a severe limitation on the 61D soil map unit. This severe limitation is based more on wetness than any other factor and would be avoided by an elevated trail system or boardwalk. A review of the Erosion factors (K, T, and wind erodibility group) for the Waldport-Heceta soil map unit place these soils in the high rill and sheet erosion category, only land subject to the direct exposure of rainfall will exhibit such rates of erosion. Within the project area the Waldport and Heceta soils have a 6" and greater duff layer along with vegetation for protection against soil erosion. However, a small portion at one end of the trail connection (<40ft) may be exposed mineral soil without the boardwalk cover and limited vegetation canopy. This exposed mineral soil is subject to higher erosion rates and soil blowing. To sustain these soils and control erosion, minimum vegetation should be removed and trail width should be limited.

Vegetated organic soils serve important ecological functions within ecosystems. These type of soils function as natural septic treatment areas, often acting as natural reservoirs and erosion controllers. In addition, the organic soil and vegetation reduce flooding. The heavy spongy material absorbs and slows down water movement. This particular wetland in the proposed project area is helping hold the bank of Muddy Lake together. If the wetland vegetation is removed or damaged, soil erosion may increase. To maintain these soils and limit the effects of erosion, a minimum of vegetation should be removed.

Some soil displacement and compaction would be a direct effect expected from new trail construction. Trail construction or maintenance by the use of hand and power tools instead of vehicular machinery would greatly minimize these soil impacts.

Indirect Effects
No indirect effects are expected from alternative 1 being implemented.

Cumulative Effects
No long term effects are expected from alternative 1 being implemented.

Recommended Mitigation

- Construction of the boardwalk should minimize the removal of vegetation to limit surface disturbance and erosion. Bare the soil through excavation only when necessary to remove embedded logs and large shrubs. Whenever possible, leave protective duff layer and vegetation intact under boardwalk.

- All treated lumber for boardwalk construction should be in accordance with the latest revision of the AWPA standards (C2) and BMPs for soil and fresh water exposure. See attached article for anticipated environmental impacts from the use of CCA treated wood in aquatic environments.

- Keeping traffic on the trail and designated areas should keep soil disturbance to a minimum. Interpretative signing emphasizing fragile organic soil and plants would help protect these resources.

Hydrological Resources & ACS Objectives

At present there is no official BLM manual on management of wetlands and floodplains, therefor direction within these areas must be taken from regional and federal procedures.

The federal delineation procedure (COE 1987 Manual) was used as a basis for the preliminary determination that this area is a wetland. The NWFP-ROD indicates that the Corps method is the federal identification procedure for technical distinctions (pg. B-16). To be classified as a wetland, a site must have all of the following: hydrophytic vegetation, hydric soils and wetland hydrology. Hydrophytic vegetation as listed in the *National Vascular Plant Species that Occur in Wetlands* (USFWS, 1996) was found to be present. Hydric soils and hydric soil conditions as outlined in *Field Indicators of Hydric Soils in the United States* (NRCS, 1998) were also classified, as well as the wetland hydrological requirements as per the manual definitions. Length and frequency of innundation appears to be seasonal, with saturated conditions persisting from late fall through early summer. Based on this evidence, this site meets the criteria and qualifies for wetland status.

The Northwest Forest Plan ROD indicates that wetlands are included under the Riparian Reserve allocation (pg. C-31) and thus all management activities within these areas must comply with applicable standards and guidelines. Recreation Management standards and guidelines (RM-1) states in part that "New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not prevent meeting ACS objectives" (NWFP-ROD).

The following Best Management Practices should be implemented on all areas of trail work to achieve the Aquatic Conservation Strategy (ACS) Objectives of the NWFP-ROD.

The approximate 400 foot segment of new trail construction within sections 10 & 11, necessitates boardwalk/platform installation over the entire length it crosses the wetland area. The elevated surface of this structure should help to protect the physical and biological integrity

of the wetland by meeting ACS objectives numbers 1, 2, 3, 5, 6, 7, 8, and 9 as outlined on page B-11 of the NWFP-ROD.

Boardwalk footings for areas where the trail will intersect beaver channels, should be located well outside the outer most slope break of the channels. These measures should help to protect channel stability as well as not interfere with beaver pathways by meeting ACS objectives numbers 2, 3, 4, 5, 6, and 9 as outlined on page B-11 of the NWFP ROD

Footings of the boardwalk should be constructed as per BLM engineering specifications to prevent settling and subsequent water blockages. This measure should help to protect water quality by meeting ACS objectives numbers 4, 8, and 9 as outlined on page B-11 of the NWFP-ROD.

Brushing and snag removal for trail construction for this project will slightly alter the present canopy cover in this wetland and therefor increase solar radiation to this area. However, due to the narrow width of the trail, these effects will most likely be minimal and will not prevent the attainment of ACS objective number 8 as outlined on page B-11 of the NWFP-ROD.

Possible placement of interpretive signs along the trail would help to educate the public to the uniqueness of this area and aid in it's protection. This measure would further help to attain ACS objectives numbers 8 and 9 as outlined on page B-11 of the NWFP-ROD.

When implemented to these standards, the design of this project should work to minimize harm and retain the Hydrologic function of the wetland. Additionally, the function of this boardwalk eliminates the need for fill and soil compaction a surface trail requires, thereby resulting in an overall "no net loss" of wetland size.

Cumulative Effects

Cumulative effects as a result of construction, hazard tree management, and frequent human intrusion may however have an overall negative effect on the integrity and value of this relatively small wetland.

Human Uses

This alternative would have the following direct impacts:

1. Visitor management control will be increased by the planned channelization of visitor traffic between the existing trails at Muddy Lake.
2. The trail system and the visitor's experience should be enhanced through the creation of a loop trail which will provide interpretive education in a unique environment.

Indirect impacts from the proposed action:

1. Trail visitations may increase due to the fact that access and passage will be easier for most visitors.

2. Environmental education/protection may increase due to future interpretative efforts and the planned direction of visitors around sensitive and fragile species.
3. The connection trail will allow for the potential of "illegitimate" side trails forming from increased visitor use particularly fishermen.

Vegetation

Anticipated Affects

Potential impacts to California pitcher-plant could occur from actual taking of plants during the construction phase. There is the potential of a change in hydrology that may impact this species. California pitcher-plant requires some sort of subsurface water flow over its roots. Any change in hydrology that would change this could in the long term impact the site.

In addition, once the trail is completed the increased access may lead to unauthorized collection of this species. California pitcher-plant is periodically collected for sale as nursery stock along with private collection. Due to their specific habitat requirements these plants typically do not survive. The trail may also lead to visitors getting off the trail which may lead to some compaction, resulting in a hydrologic change. There is already some evidence of this occurring at the east end of the proposed trail.

One of the proposed routes crosses the small sphagnum bog at the northeast corner of Muddy Lake. During the summer and fall, this area is susceptible to trampling and compaction. This may also lead to sphagnum collection which would impact the unique values of the bog.

While trail development is one of the actions described in the New River management plan, these actions should not degrade the natural resource values that the ACEC was designated for (special status species, wildlife habitat, cultural/historic, and botanical communities). The Federal Land Policy Management Act (FLPMA Public Law 94-579) states that ". . . ACECs are not necessarily areas in which no development can occur. Limited development, when wisely planned and properly managed, can occur in these areas without permanent damage to the historic, cultural or natural systems and processes for which the area was designated." This action should not degrade the values that New River ACEC was designated.

Cumulative effects

These unique bog communities which include California pitcher-plant, are relatively rare along the coast. The impact of losing this habitat would be an irretrievable loss of resources.

Mitigation measures

The best route, as far as botanical resources are concerned, would be to have the trail not cross the sphagnum bog at the northwest corner of the lake. It would be better that the trail go along the upper portions of the wetland. Mitigation measures to reduce/eliminate impacts are as follows:

1. Construct an elevated walkway in all wetland areas.

2. Walkway should have rails sufficient enough to prevent people from leaving the walkway.
3. Include interpretative signs stressing fragility of the plant communities and uniqueness of species present.

Wildlife

This alternative proposes a boardwalk and associated trail through a wetland. The construction and maintenance of the boardwalk would lead to a reduction of the Port-Orford cedar snags along the lake which provide habitat and food for insects, rodents, and birds. The boardwalk could also effect movement of some animals. Proper design and location of the boardwalk is essential if the project is to be "wildlife friendly." It should be located as far from the lake's edge as possible while avoiding as much POC as possible. This will reduce the audible projections across the lake and minimize the number of snags to be felled. The boardwalk should also be designed to allow for passage of animals underneath the elevated tread (for example, have the tread elevated approximately 36"). The boardwalk should not have railings or walls which could obstruct animal passage.

Photo 7- Irrigation Trough

Cultural Resources

The trail connection can be designed to bypass the irrigation feature (trough and associated water pipes). As long as this is done, it is not expected that this project will affect cultural resources. However, if any other potential cultural resources are encountered during project work, all ground disturbing activity in the vicinity should stop and the District Archeologist should be notified at once.

No Action

Soils

Selection of the No Action alternative would not address the original and valid concern of the degradation of a unique wetland community. The Old Bog trail would still abrubtly end into a wetland and traffic would continue to filter around and through this sensitive area. The hydric soils within the wetland community may be disturbed or displaced. These vegetated organic soils serve important ecological functions within ecosystems, often acting as natural reservoirs and erosion controllers.

Human Uses

By not providing a trail connection (alternative #1) or an obvious terminus (viewing area #2) to the "unofficial" trail, impacts from continued "wandering" from public visitation can be expected to continue at the present rate. People will continue to hike to the edge of the sphagnum bog and to the end of the "unofficial" trail leading to the site of the proposed Viewing Area #2. Many of these visitors will seek to make a connection and will continue to create and extend the "unofficial" trails which have already formed. Vegetation including the Darlingtonia and Sphagnum is likely to become denuded in areas where people are walking off the trail.

Vegetation

Impacts to the resources including the Sphagnum bog would continue at the present rate or increase. The site of Viewing Area #1 would remain denuded of vegetation and would receive no site restoration. Other impacts that could result due to the present non-regulated visitor use include a possible decline in the composition and structural diversity of plant communities

Wildlife

It is expected that this action would mean the current trail through the brush leading to the proposed site #2 would not be managed and overtime would grow back providing that the public does not keep the path open through frequency of use.

No seasonal restrictions or mitigation is recommended for this alternative. The major drawback from this proposal is the continued lack of vegetation at site #1, where human use as a primitive boat ramp has reduced vegetative cover. The lack of replacement vegetative cover, and the opportunity for using the site as a viewing area, is expected to continue. Unscreened access to this site is expected to impact wildlife using the Lake particularly if visitor use of the area is encouraged, or promoted.

Cumulative Effects

The no action alternative should retain, or improve the habitat quality for wildlife within the aquatic and riparian habitats of the ACEC. Developments elsewhere within the ACEC (the development of a wide road and better access to the river via the boat ramp area) is assumed to have increased the human pressure along the river corridor. This pressure is very likely to squeeze sensitive wildlife species into other surrounding habitat areas such as Muddy Lake. This alternative fully complies with the New River ACEC and the Northwest Forest Plan.

Cultural Resources

Under the no action alternative, the cultural resources (irrigation trough and pipes) could be impacted by visitors attempting to traverse the lake's edge. Unfortunately, the irrigation ditch and pipes are located in an area that is attractive for visitors seeking to get from one side of the lake to the other. If the no action is selected, the District should monitor impacts to the bog and surrounding area. If any damage to cultural resources happens to take place, the District Archeologist should be notified immediately.

V. List of Agencies and Individuals Contacted

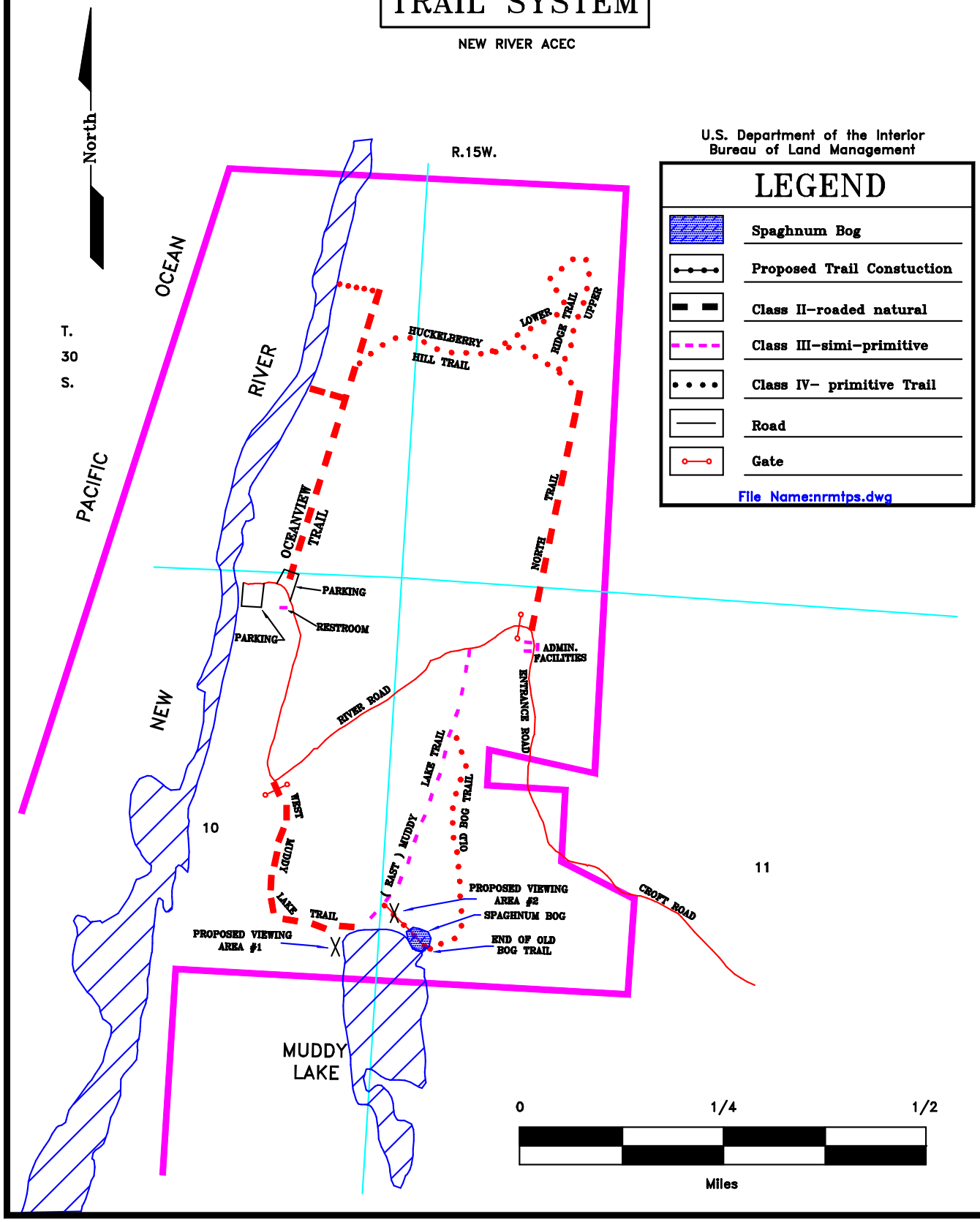
The general public was notified of the planned EA through a public announcement in *The World*, as well, email and the District's website. The EA Analysis File contains a list of interested individuals and public agencies contacted during the scoping process.

- Carrie Phillips, United States Fish and Wildlife Service
- Kerrie Palermo, District Wildlife Biologist

MAP 7

TRAIL SYSTEM

NEW RIVER ACEC



U.S. Department of the Interior
Bureau of Land Management

LEGEND

- Spaghnum Bog
- Proposed Trail Constuction
- Class II–roaded natural
- Class III–simi–primitive
- Class IV– primitive Trail
- Road
- Gate

File Name:nrmtps.dwg